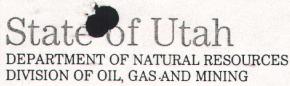


Division Director



355 West North Temple 3 Triad Center, Suite 350 Salt Lake City, Utah 84180-1203 801-538-5340



October 9, 1991

Mr. Max J. Reynolds Vice President Operations Great Salt Lake Minerals 765 North 10500 West Ogden, Utah 84402

Dear Mr. Reynolds:

Re: <u>Final Approval, Little Mountain Plant, M/057/002, Great Salt Lake Minerals and Chemicals Corporation, Weber County, Utah</u>

The Board of Oil Gas and Mining approved Great Salt Lake Minerals and Chemical Corporation's form and amount of surety (as amended) for the Little Mountain Plant on October 4, 1991.

Enclosed is a copy of the original signed and approved Reclamation Contract and the package that went before the Board for approval.

The surety for Great Salt Lake Minerals, Little Mountain Plant, is to be evaluated and updated on an annual basis until 1994. The surety approved by the Division for \$228,000 in 1991 dollars will have to be evaluated and updated August 31, 1992.

Thank you for your time and support in this permitting process. We look forward to working with you in the future in keeping this permit and surety current.

Sincerely,

Anthony A. Gallegos Reclamation Engineer

thony d. Salleye

jb Enclosure M057002.1

m/057/002

EXECUTIVE SUMMARY

Prepared September 16, 1991

Mine Name: Little Mountain Mine	I.D. No: M/057/002
Operator: Great Salt Lake Minerals	County: Weber
and Chemical Corporation	New/Existing: Existing
765 North 10500 West	Mineral Ownership: State of Utah
Ogden, Utah 84402	Surface Ownership: St. of Utah, GSLM
Telephone: (801) 521-3556	Lease No.(s): ML 25384, ML 25859,
Telephone. (801) 321-3330	ML 19024, ML 19059, ML 21708, ML
	22782, ML 23023, ML 24184, ML
	24631, R-W 1073
Contact Domany May Daymolds	Permit Term: Life of Mine
Contact Person: Max Reynolds	Fernit Term. Life of Wiffle
Life of Mine: 200 Years	
Life of Wiffle. 200 feats	
Local Description: Portions of Costion E TON DOW	Section 21 D7N DOW: Sections 16 17
Legal Description: Portions of Section 5, T6N, R9W	, Section 31, R/N, R9W, Sections 10, 17,
21, 22, 26, 35, and 36, T7N, R10W	
Mineral(s) to be Mined: Potassium sulfate (Potash).	Sodium sulfate Sodium chloride (Salt)
	Sodium sunate, Sodium emoride (Sait),
and Magnesium chloride (Dust suppressant).	
Mining Methods: Solar evaporation	
wining wethous. Bolar evaporation	
Acres to be Disturbed: Plant site, 500 acres; Evapor	ration ponds 51 000 acres: (current
17,500 + 17,000 (new); Borrow areas/pits, 115 acr	
17,500 1 17,000 (new), Bollow dreasy pits, 115 del	
Present Land Use: Mining and minerals processing.	
Trescrit Land OSC. Willing and Innicials processing.	
Postmining Land Use: Recreation or waterfowl refu	ge (lake) and industrial (plant site).
1 ostiliming Land Osc. Recreation of Wateriowi Tera	ge (lake) and measurar (plant bite);
Variances from Reclamation Standards (Rule R613)	Granted: R613-004-111 (5) Land Use:
R613-004-111 (7) Highwalls; R613-004-111 (9) Im	
Soils, R613-004-111 (13) Revegetation.	poundments, and Rolls oo 111 (12)
Sons, Rois-oot-iii (13) Revegetation.	
Soils and Geology:	
Solis and Geology.	
Soil Description: Clay soils are used in dike constru	ction
Soil Description. Clay soils are used in tike constru	etion:
Ph: N/A	
ΓΙΙ. <u>1</u> 1 / Λ	
Special Handling Problems: Although the borrow pr	its do not have tonsoil available for
reclamation, the clay fines will be used to aid plant	giowiii.
Coolers Description. The second of the last	ilt on mud flate on the Creat Salt Lake
Geology Description: The evaporation ponds are bu	all on mud hats on the Great Sait Lake.

Page 2 Executive Summary Great Salt Lake Minerals M/057/002

Hydrology:
Ground Water Description: N/A
Surface Water Description: The Bear River Bay and Willard Bay are isolated from the solar ponds.
Water Monitoring Plan: N/A
Ecology:
Vegetation Type(s); Dominant Species: Alkali sacaton, sagebrush, rabbitbrush and saltbrush.
Percent Surrounding Vegetative Cover: 30%
Wildlife Concerns: None
Surface Facilities: The 500 acre plant site is located in an industrial park with a Southern Pacific rail spur.
Mining and Reclamation Plan Summary:

During Operations:

- Great Salt Lake Minerals and Chemicals Corporation (GSLM) pumps brine from the north arm of the Great Salt Lake at the southwest corner of Promontory Peninsula through a system of existing solar evaporation ponds. As the brines flow through the pond system, water evaporates and minerals precipitate on pond floors.
- 2. After the evaporation process is finished, minerals are harvested and trucked to GSLM's plant site on Little Mountain for processing.
- 3. Borrow material is excavated from borrow pits located on fee land at Little Mountain, Promontory and Strongs Knob.
- 4. As part of the lese agreement with the State, all unused minerals in the pond system or in the plant effluent are returned to the lake.

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Executive Summary
Great Salt Lake Minerals
M/057/002

5. GSLM leases 89,000 acres of lands from the State of Utah. Currently, ponds cover 17,500 acres, with an expansion up to 34,000 acres planned and already permitted by various state and federal agencies through the Army Corps of Engineers. Projected mine life is 200 years.

After Operations:

- 1. After cessation of operations, GSLM will negotiate a transfer of the pond system to the State of Utah for wildlife management, as per requirements of state leases. Any structures and equipment not suitable for these purposes will be removed. Roads and dikes will remain in place.
- 2. If the area is not accepted for wildlife management, all structures and equipment will be removed. Dikes will be breached to allow water to circulate and clean out the ponds. The removal of these structures and equipment and the breachment of the dikes is included in the reclamation estimate. Wave action will eventually wash out and level non-maintained dikes and roads.
- 3. The 500 acre plant site and structures on Little Mountain are part of a zoned and regulated industrial park and are marketable as such for continued use. The surety includes removal of trash and debris only. Unmarketable structures will be removed for scrap value. The area will not be returned to its original conditions.
- 4. Borrow pits will be recontoured to match the surrounding areas and to provide for drainage of water. A single highwall on pit No. 5 will remain at a 70° slope. The areas will then be roughened and seeded with the following species which are adapted to the site:

Alkali Sacaton	1 lb/acre
Westeir Wheatgrass	4 lb/acre
Basin Wildrye	4 lb/acre
Yellow Sweetclover	2 lb/acre
Big Sagebrush	1 lb/acre
	12 lb/acre

No topsoil will be available for reclamation and the soil may need to be amended to support plant growth. These soil amendments are included in the surety.

Surety:

Amount: \$228,00	0 (1991 \$)
Form: Letter of C	redit
Renewable Term:_	Annual until 1994

RECLAMATION ESTIMATE

Great Salt Lake Minerals & Chemicals Corporation

West Shore Dike & Underwater Channel Project – AMENDMENT

Weber County M/057/002 last revision 8/29/91

Prepared by Utah State Division of Oil, Gas & Mining

Reclamation Details

- -These details are for reclamation of the amendment features only
- -Unit costs are from the 1989 DOGM estimate plus actual escalation
- -ASSUMED: 20 acres of disturbance at 57 acre borrow area on Strongs Knob
- -ASSUMED: All quarry slopes at 45 degrees or less in borrow area
- -ASSUMED: No regrading or revegetation activities at the borrow area
- -New dike approximately 8.5 miles long(Strong's Knob to Fingerpoint)
- -ASSUMED: A breach in the dike every mile
- -New pond area of approximately 17,000 acres; NO RECLAMATION
- -New pumping station at Finger Point; ASSUME all structures removed
- -Access road portion across lake bed, approx. 1 1/4 miles; total road 3 miles
- -Road on State Lands easement; ASSUME breach in lake bed every 1/2 mile
- -20 miles of underwater channel in the Great Salt Lake: NO RECLAMATION
- -Reclamation estimate to be calculated in 1991 dollars
- -This amount to be added to the 1991 surety update for the entire operation
- -Surety to be renewed annually until the 5-year review date in 1994

Description	# Units	\$/Unit	Cost(\$)
Breaching dike		each 1,247	9,976
Removal of pump station facilities	1	sum 20,000	20,000
Breaching access road	2	each 1,247	2,494
Mobilization	1	2,000	2,000
	SUBTOTAL		34,470
+ 10% CONTINGENCY			3,447
AMENDMENT TOTAL 1991 – \$			37,917
ENTIRE OPERATION RECLAMATION	SURETY IN 1	1990 – \$	186,500
ESCALATED USING 1.93% TO 1991 VALUE =>			190,099
ADD IN AMENDMENT RECLAMATION	COST		37,917
SURETY AMOUNT - ENTIRE OPERATION (1991-\$)			228,016
ROUNDED AMOUNT-ENTIRE OPERA	TION (1991-	\$)	\$228,000

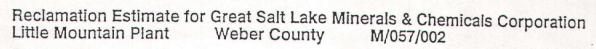
Reclamation Estimate for Great Salt Lake Minerals & Chemicals Corporation Little Mountain Plant Weber County M/057/002

Prepared By Utah State Division of Oil, Gas and Mining August 4, 1989

Description	Quantity	Unit	\$/Unit	Cost (\$)
Plant Site Reclamation (a) Remove Trash		Lump Sum		20,000
Subtotal				20,000
Brine Supply and Pond System Reclamation (b) Remove Wood Structures and Pump Equipme Breach Key Dikes	ent 10	Lump Sum Each	1,200	60,000 12,000
Subtotal				72,000
Borrow Pit Reclamation (c) Install Fenceline Above Highwall Regrade for Uniformity Revegetate Subtotal	200 140 140	Linear Feet Acres Acres	15 180 350	3,000 25,200 49,000
Totals Add Contingency (10%)				166,200 16,620
TOTAL RECLAMATION COST (1989 Dollars)				182,820
TOTAL RECLAMATION COST (1994 Dollars) @ 1	.93% Ann	ual Inflation		201,000

Notes:

- (a) The plant site is located in an industrial complex that is suitable for various post-mine uses. Reclamation is limited to general cleanup at the 500 acre plant site.
- (b) Due to the wave action of the Great Salt Lake, the dikes will only require breaching in appropriate locations to allow faster dilution of captive salts. The dikes will eventually be leveled by this wave action.
- (c) GSLM extracts approximately 50,000 to 100,000 cubic yards of sand and gravel annually from borrow areas to maintain existing dikes. These borrow pits will be regraded and seeded. One of the pits has a steep highwall that will require fencing.



Prepared By Utah State Division of Oil, Gas and Mining August 4, 1989

Cost Parameters Used

D-8 Dozer (0&0) 988B Wheel Loader (0&0)	160 165			
Labor Only Farm Tractor (0&0) Speed Width of Pass	24 67 4 6			
Revegetation Cost per Acre	Quantity	Unit	\$/Unit	Total Cost (\$)
Bare Costs Fertilizer (18-46-0) Seed Mix Native Hay Mulch Seed Mix (drilled) Subtotal	12	Tons	0.20 7 50 24	20 88 100 12
Application Costs Native Hay Mulch (spread by hand) Native Hay Mulch (disc into ground) Fertilizer (broadcast by hand) Seed Mix (drilled) Scarify (tractor with chain)			24 67 24 0 67	220 72 23 12 0 23
Subtotal				130
Total Revegetation Cost per Acre				350